

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/587,450
Source: IFWP
Date Processed by STIC: 8/10/06

ENTERED



IFWP

RAW SEQUENCE LISTING

DATE: 08/10/2006

PATENT APPLICATION: US/10/587,450

TIME: 10:46:41

Input Set : F:\14184-041US1.txt

Output Set: N:\CRF4\08102006\J587450.raw

```

4 <110> APPLICANT: Currie, Mark G.
7 <120> TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR THE
8   TREATMENT OF GASTROINTESTINAL DISORDERS
11 <130> FILE REFERENCE: 14184-041US1
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/587,450
C--> 13 <141> CURRENT FILING DATE: 2006-07-27
13 <150> PRIOR APPLICATION NUMBER: PCT/US2005/002941
14 <151> PRIOR FILING DATE: 2005-01-31
16 <150> PRIOR APPLICATION NUMBER: US 60/540,675
17 <151> PRIOR FILING DATE: 2004-01-30
19 <160> NUMBER OF SEQ ID NOS: 4733
21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 16
25 <212> TYPE: PRT
26 <213> ORGANISM: Artificial Sequence
28 <220> FEATURE:
29 <223> OTHER INFORMATION: Synthetically generated peptide
31 <220> FEATURE:
32 <221> NAME/KEY: VARIANT
33 <222> LOCATION: 1
34 <223> OTHER INFORMATION: Xaa = Ser, Asn, Tyr, Ala, Gln, Pro, Lys, Gly, or
35   Thr, or is missing
37 <220> FEATURE:
38 <221> NAME/KEY: VARIANT
39 <222> LOCATION: 2
40 <223> OTHER INFORMATION: Xaa = His, Asp, Glu, Ala, Ser, Asn, Gly, or is
41   missing
43 <220> FEATURE:
44 <221> NAME/KEY: VARIANT
45 <222> LOCATION: 3
46 <223> OTHER INFORMATION: Xaa = Thr, Asp, Ser, Glu, Pro, Val or Leu
48 <220> FEATURE:
49 <221> NAME/KEY: VARIANT
50 <222> LOCATION: 5
51 <223> OTHER INFORMATION: Xaa = Asp, Ile or Glu
53 <220> FEATURE:
54 <221> NAME/KEY: VARIANT
55 <222> LOCATION: 6
56 <223> OTHER INFORMATION: Xaa = Ile, Trp or Leu
58 <220> FEATURE:
59 <221> NAME/KEY: VARIANT
60 <222> LOCATION: 7

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```

61 <223> OTHER INFORMATION: Xaa = Cys, Ser, or Tyr
63 <220> FEATURE:
64 <221> NAME/KEY: VARIANT
65 <222> LOCATION: 8 /
66 <223> OTHER INFORMATION: Xaa = Ala, Val, Thr, Ile, Met or is missing
68 <220> FEATURE:
69 <221> NAME/KEY: VARIANT
70 <222> LOCATION: 9 /
71 <223> OTHER INFORMATION: Xaa = any amino acid; or Phe, Tyr, Asn, Trp; or an
72     amino acid other than Phe, Trp, or Tyr; or
73     non-aromatic amino acid ; or is missing
75 <220> FEATURE:
76 <221> NAME/KEY: VARIANT
77 <222> LOCATION: 10 /
78 <223> OTHER INFORMATION: Xaa = Ala, Val, Met, Thr or Ile
80 <220> FEATURE:
81 <221> NAME/KEY: VARIANT
82 <222> LOCATION: 11 /
83 <223> OTHER INFORMATION: Xaa = Ala or Val
85 <220> FEATURE:
86 <221> NAME/KEY: VARIANT
87 <222> LOCATION: 13 /
88 <223> OTHER INFORMATION: Xaa = Ala or Thr
90 <220> FEATURE:
91 <221> NAME/KEY: VARIANT
92 <222> LOCATION: 14 /
93 <223> OTHER INFORMATION: Xaa = Gly, Ala or Ser
95 <220> FEATURE:
96 <221> NAME/KEY: VARIANT
97 <222> LOCATION: 15 /
98 <223> OTHER INFORMATION: Xaa = Cys, Tyr or is missing
100 <220> FEATURE:
101 <221> NAME/KEY: VARIANT
102 <222> LOCATION: 16 /
103 <223> OTHER INFORMATION: Xaa = Trp, Tyr or Phe ; or Lys or Arg ; or is
104     missing ; or His, Leu or Ser
106 <400> SEQUENCE: 1
W--> 107 Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa
108   1           5           10           15
111 <210> SEQ ID NO.: 2
112 <211> LENGTH: 491
113 <212> TYPE: PRT
114 <213> ORGANISM: Homo sapiens
116 <400> SEQUENCE: 2
117 Met Ala Leu Leu Trp Gly Leu Leu Val Leu Ser Trp Ser Cys Leu Gln
118   1           5           10           15
119 Gly Pro Cys Ser Val Phe Ser Pro Val Ser Ala Met Glu Pro Leu Gly
120           20           25           30
121 Arg Gln Leu Thr Ser Gly Pro Asn Gln Glu Gln Val Ser Pro Leu Thr

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```

122          35          40          45
123 Leu Leu Lys Leu Gly Asn Gln Glu Pro Gly Gly Gln Thr Ala Leu Lys
124          50          55          60
125 Ser Pro Pro Gly Val Cys Ser Arg Asp Pro Thr Pro Glu Gln Thr His
126 65          70          75          80
127 Arg Leu Ala Arg Ala Met Met Ala Phe Thr Ala Asp Leu Phe Ser Leu
128          85          90          95
129 Val Ala Gln Thr Ser Thr Cys Pro Asn Leu Ile Leu Ser Pro Leu Ser
130          100          105          110
131 Val Ala Leu Ala Leu Ser His Leu Ala Leu Gly Ala Gln Asn His Thr
132          115          120          125
133 Leu Gln Arg Leu Gln Gln Val Leu His Ala Gly Ser Gly Pro Cys Leu
134          130          135          140
135 Pro His Leu Leu Ser Arg Leu Cys Gln Asp Leu Gly Pro Gly Ala Phe
136 145          150          155          160
137 Arg Leu Ala Ala Arg Met Tyr Leu Gln Lys Gly Phe Pro Ile Lys Glu
138          165          170          175
139 Asp Phe Leu Glu Gln Ser Glu Gln Leu Phe Gly Ala Lys Pro Val Ser
140          180          185          190
141 Leu Thr Gly Lys Gln Glu Asp Asp Leu Ala Asn Ile Asn Gln Trp Val
142          195          200          205
143 Lys Glu Ala Thr Glu Gly Lys Ile Gln Glu Phe Leu Ser Gly Leu Pro
144          210          215          220
145 Glu Asp Thr Val Leu Leu Leu Leu Asn Ala Ile His Phe Gln Gly Phe
146 225          230          235          240
147 Trp Arg Asn Lys Phe Asp Pro Ser Leu Thr Gln Arg Asp Ser Phe His
148          245          250          255
149 Leu Asp Glu Gln Phe Thr Val Pro Val Glu Met Met Gln Ala Arg Thr
150          260          265          270
151 Tyr Pro Leu Arg Trp Phe Leu Leu Glu Gln Pro Glu Ile Gln Val Ala
152          275          280          285
153 His Phe Pro Phe Lys Asn Asn Met Ser Phe Val Val Leu Val Pro Thr
154          290          295          300
155 His Phe Glu Trp Asn Val Ser Gln Val Leu Ala Asn Leu Ser Trp Asp
156 305          310          315          320
157 Thr Leu His Pro Pro Leu Val Trp Glu Arg Pro Thr Lys Val Arg Leu
158          325          330          335
159 Pro Lys Leu Tyr Leu Lys His Gln Met Asp Leu Val Ala Thr Leu Ser
160          340          345          350
161 Gln Leu Gly Leu Gln Glu Leu Phe Gln Ala Pro Asp Leu Arg Gly Ile
162          355          360          365
163 Ser Glu Gln Ser Leu Val Val Ser Gly Val Gln His Gln Ser Thr Leu
164          370          375          380
165 Glu Leu Ser Glu Val Gly Val Glu Ala Ala Ala Ala Thr Ser Ile Ala
166 385          390          395          400
167 Met Ser Arg Met Ser Leu Ser Ser Phe Ser Val Asn Arg Pro Phe Leu
168          405          410          415
169 Phe Phe Ile Phe Glu Asp Thr Thr Gly Leu Pro Leu Phe Val Gly Ser
170          420          425          430

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```

171 Val Arg Asn Pro Asn Pro Ser Ala Pro Arg Glu Leu Lys Glu Gln Gln
172      435                      440                      445
173 Asp Ser Pro Gly Asn Lys Asp Phe Leu Gln Ser Leu Lys Gly Phe Pro
174      450                      455                      460
175 Arg Gly Asp Lys Leu Phe Gly Pro Asp Leu Lys Leu Val Pro Pro Met
176 465                      470                      475                      480
177 Glu Glu Asp Tyr Pro Gln Phe Gly Ser Pro Lys
178      485                      490
181 <210> SEQ ID NO: 3
182 <211> LENGTH: 29
183 <212> TYPE: PRT
184 <213> ORGANISM: Hirudinaria manillensis
186 <220> FEATURE:
187 <221> NAME/KEY: VARIANT
188 <222> LOCATION: 23
189 <223> OTHER INFORMATION: Xaa = any amino acid
191 <400> SEQUENCE: 3
192 Val Asp Glu Lys Ala Glu Val Thr Asp Gly Leu Cys Gly Asp Trp Thr
193 1      5      10      15
W--> 194 Cys Ser Gly Ala Gln Val Xaa Gln Asn Asp Ala Ala Val
195      20      25
198 <210> SEQ ID NO: 4
199 <211> LENGTH: 55
200 <212> TYPE: PRT
201 <213> ORGANISM: Hirudo medicinalis
203 <400> SEQUENCE: 4
204 Thr Gln Gly Asn Thr Cys Gly Gly Glu Thr Cys Ser Ala Ala Gln Val
205 1      5      10      15
206 Cys Leu Lys Gly Lys Cys Val Cys Asn Glu Val His Cys Arg Ile Arg
207      20      25      30
208 Cys Lys Tyr Gly Leu Lys Lys Asp Glu Asn Gly Cys Glu Tyr Pro Cys
209      35      40      45
210 Ser Cys Ala Lys Ala Ser Gln
211      50      55
214 <210> SEQ ID NO: 5
215 <211> LENGTH: 70
216 <212> TYPE: PRT
217 <213> ORGANISM: Hirudo medicinalis
219 <400> SEQUENCE: 5
220 Thr Glu Phe Gly Ser Glu Leu Lys Ser Phe Pro Glu Val Val Gly Lys
221 1      5      10      15
222 Thr Val Asp Gln Ala Arg Glu Tyr Phe Thr Leu His Tyr Pro Gln Tyr
223      20      25      30
224 Asp Val Tyr Phe Leu Pro Glu Gly Ser Pro Val Thr Leu Asp Leu Arg
225      35      40      45
226 Tyr Asn Arg Val Arg Val Phe Tyr Asn Pro Gly Thr Asn Val Val Asn
227      50      55      60
228 His Val Pro His Val Gly
229 65      70

```

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Input Set : F:\14184-041US1.txt

Output Set: N:\CRF4\08102006\J587450.raw

232 <210> SEQ ID NO: 6
 233 <211> LENGTH: 20
 234 <212> TYPE: PRT
 235 <213> ORGANISM: Bombyx mori
 237 <400> SEQUENCE: 6
 238 Asp Glu Pro Thr Thr Lys Pro Phe Cys Glu Gln Ala Phe Gly Asp Cys
 239 1 5 10 15
 240 Gly Thr Pro Tyr
 241 20
 244 <210> SEQ ID NO: 7
 245 <211> LENGTH: 20
 246 <212> TYPE: PRT
 247 <213> ORGANISM: Bombyx mori
 249 <400> SEQUENCE: 7
 250 Asp Lys Pro Thr Thr Glu Pro Phe Ile Cys Glu Gln Arg Phe Gly Asn
 251 1 5 10 15
 252 Cys Gly Thr Gly
 253 20
 256 <210> SEQ ID NO: 8
 257 <211> LENGTH: 66
 258 <212> TYPE: PRT
 259 <213> ORGANISM: Unknown
 261 <220> FEATURE:
 262 <223> OTHER INFORMATION: Synthetically generated peptide
 264 <400> SEQUENCE: 8
 265 Ile Thr Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
 266 1 5 10 15
 267 Glu Gly Ser Asn Val Cys Gly Lys Gly Asn Lys Cys Ile Leu Gly Ser
 268 20 25 30
 269 Gln Gly Lys Asp Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
 270 35 40 45
 271 Gln Ser His Asn Gln Gly Asp Phe Glu Pro Ile Pro Glu Asp Ala Tyr
 272 50 55 60
 273 Asp Glu
 274 65
 277 <210> SEQ ID NO: 9
 278 <211> LENGTH: 20
 279 <212> TYPE: PRT
 280 <213> ORGANISM: Artificial Sequence
 282 <220> FEATURE:
 283 <223> OTHER INFORMATION: Hirudin variant
 285 <400> SEQUENCE: 9
 286 Phe Pro Arg Pro Gly Gly Gly Gly Asn Gly Asp Phe Glu Glu Ile Pro
 287 1 5 10 15
 288 Glu Glu Tyr Leu
 289 20
 292 <210> SEQ ID NO: 10
 293 <211> LENGTH: 100
 294 <212> TYPE: PRT

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/587,450

DATE: 08/10/2006
TIME: 10:46:42

Input Set : F:\14184-041US1.txt
Output Set: N:\CRF4\08102006\J587450.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 1,2,3,5,6,7,8,9,10,11,13,14,15,16

Seq#:3; Xaa Pos. 23

Seq#:814; Xaa Pos. 3

Seq#:815; Xaa Pos. 3,4

Seq#:816; Xaa Pos. 3,4,5

Seq#:817; Xaa Pos. 3,4,5,6

Seq#:818; Xaa Pos. 3,4,5,7

Seq#:819; Xaa Pos. 3,4,5,8

Seq#:820; Xaa Pos. 3,4,5,9

Seq#:821; Xaa Pos. 3,4,5,10

Seq#:822; Xaa Pos. 3,4,5,11

Seq#:823; Xaa Pos. 3,4,5,12

Seq#:824; Xaa Pos. 3,4,5,13

Seq#:825; Xaa Pos. 3,4,5,14

Seq#:826; Xaa Pos. 3,4,5,15

Seq#:827; Xaa Pos. 3,4,5,16

Seq#:828; Xaa Pos. 3,4,5,17

Seq#:829; Xaa Pos. 3,4,5,18

Seq#:830; Xaa Pos. 3,4,5,19

Seq#:831; Xaa Pos. 3,4,5,20

Seq#:832; Xaa Pos. 3,4,6

Seq#:833; Xaa Pos. 3,4,6,7

Seq#:834; Xaa Pos. 3,4,6,8

Seq#:835; Xaa Pos. 3,4,6,9

Seq#:836; Xaa Pos. 3,4,6,10

Seq#:837; Xaa Pos. 3,4,6,11

Seq#:838; Xaa Pos. 3,4,6,12

Seq#:839; Xaa Pos. 3,4,6,13

Seq#:840; Xaa Pos. 3,4,6,14

Seq#:841; Xaa Pos. 3,4,6,15

Seq#:842; Xaa Pos. 3,4,6,16

Seq#:843; Xaa Pos. 3,4,6,17

Seq#:844; Xaa Pos. 3,4,6,18

Seq#:845; Xaa Pos. 3,4,6,19

Seq#:846; Xaa Pos. 3,4,6,20

Seq#:847; Xaa Pos. 3,4,7

Seq#:848; Xaa Pos. 3,4,7,8

Seq#:849; Xaa Pos. 3,4,7,9

Seq#:850; Xaa Pos. 3,4,7,10

Seq#:851; Xaa Pos. 3,4,7,11

Seq#:852; Xaa Pos. 3,4,7,12

Seq#:853; Xaa Pos. 3,4,7,13

Seq#:854; Xaa Pos. 3,4,7,14

Seq#:855; Xaa Pos. 3,4,7,15

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/587,450

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Input Set : F:\14184-041US1.txt
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Seq#:856; Xaa Pos. 3,4,7,16
Seq#:857; Xaa Pos. 3,4,7,17
Seq#:858; Xaa Pos. 3,4,7,18
Seq#:859; Xaa Pos. 3,4,7,19
Seq#:860; Xaa Pos. 3,4,7,20
Seq#:861; Xaa Pos. 3,4,8
Seq#:862; Xaa Pos. 3,4,8,9

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:817; Line(s) 10829,10831
Seq#:818; Line(s) 10849
Seq#:819; Line(s) 10866,10867

VERIFICATION SUMMARY

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Input Set : F:\14184-041US1.txt

Output Set: N:\CRF4\08102006\J587450.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No
L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:107 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:194 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:16
L:10772 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:814 after pos.:0
L:10791 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:815 after pos.:0
L:10810 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:816 after pos.:0
L:10829 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:817 after pos.:0
L:10848 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:818 after pos.:0
L:10866 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:819 after pos.:0
L:10884 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:820 after pos.:0
L:10906 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:821 after pos.:0
L:10928 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:822 after pos.:0
L:10949 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:823 after pos.:0
L:10970 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:824 after pos.:0
L:10990 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:825 after pos.:0
L:11010 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:826 after pos.:0
L:11030 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:827 after pos.:0
L:11050 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:828 after pos.:0
M:341 Repeated in SeqNo=828
L:11070 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:829 after pos.:0
M:341 Repeated in SeqNo=829
L:11090 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:830 after pos.:0
M:341 Repeated in SeqNo=830
L:11110 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:831 after pos.:0
M:341 Repeated in SeqNo=831
L:11130 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:832 after pos.:0
L:11150 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:833 after pos.:0
L:11170 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:834 after pos.:0
L:11190 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:835 after pos.:0
L:11210 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:836 after pos.:0
L:11230 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:837 after pos.:0
L:11250 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:838 after pos.:0
L:11271 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:839 after pos.:0
L:11291 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:840 after pos.:0
L:11311 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:841 after pos.:0
L:11331 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:842 after pos.:0
L:11351 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:843 after pos.:0
M:341 Repeated in SeqNo=843
L:11371 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:844 after pos.:0
M:341 Repeated in SeqNo=844
L:11391 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:845 after pos.:0
M:341 Repeated in SeqNo=845
L:11411 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:846 after pos.:0
M:341 Repeated in SeqNo=846
L:11432 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:847 after pos.:0
L:11453 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:848 after pos.:0
L:11473 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:849 after pos.:0

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L:11493 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:850 after pos.:0
L:11513 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:851 after pos.:0
L:11533 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:852 after pos.:0
L:11553 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:853 after pos.:0